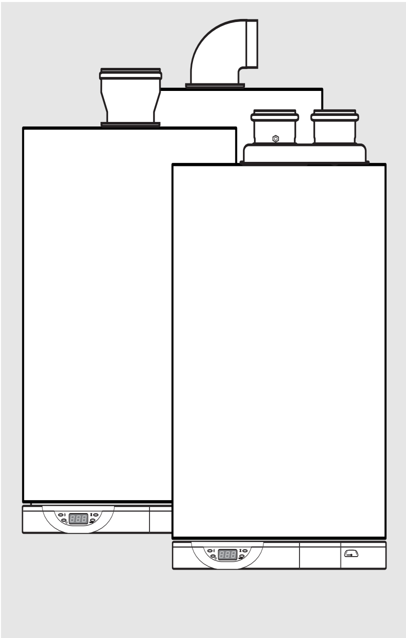
MAINTENANCE AND SERVICE GUIDE

C&M
CHAFFOTEAUX & MAURY

Centora green

Fanned Flue Condensing Central Heating System Boiler 24 and 30

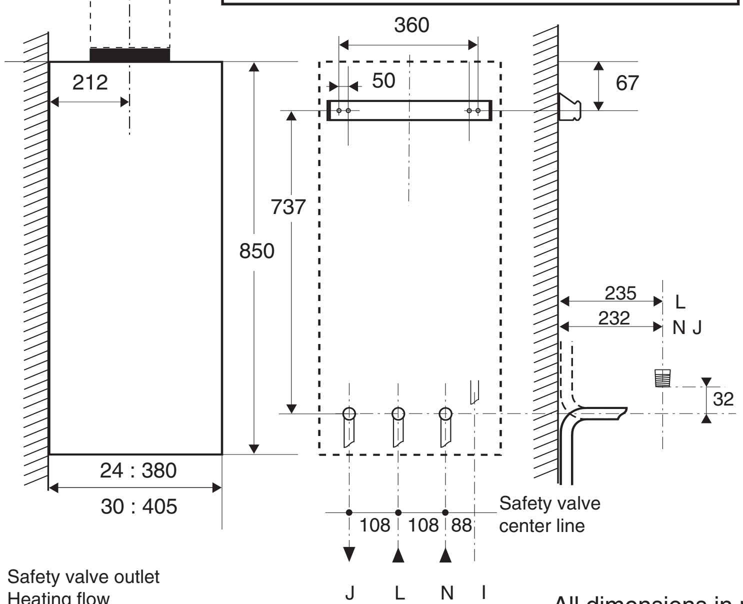
Dimensions



Flue types:
C 13: C 33: C 53:

Outer case dimensions :

- Width :	440 (minimum space required 450)
- Height :	850
- Depth :	380 (24kW) - 405 (30 kW)



I Safety valve outlet
J Heating flow
L Gas supply
N Heating return

All dimensions in mm

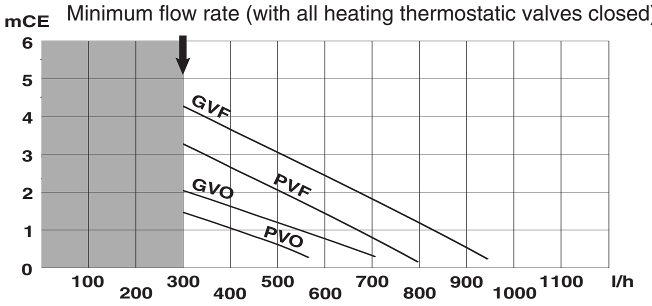
Technical Data

	24 kW	30 kW
Heat gross input C/H maxi	9.2-27.8 kW	10.4-31.6 kW
Heat output C/H 50°/30° maxi	9-26 kW	10-30kW
Heat output C/H 80°/60° maxi	8-24 kW	9-28 kW
C/H operating temperature	80°C max	80°C max
C/H circuit pressures Min operating	0.7 bar	0.7 bar
C/H circuit pressures Max operating	2.5 bar	2.5 barr
Safety discharge	3 bar	3 bar
Expansion vessel - Pre-charge pressure	0,7 bar	0.7 bar
Net capacity at 3 bar in liter	5.44	5,44
Supply	230 v	230 v
Consumption	150 w	150 w
Protection	IP 44	IP 44
Fuse F1/F2/F3/F4	2 A/1.25 A/0.315 A/0.250 A	
External controls	24 v	24 v

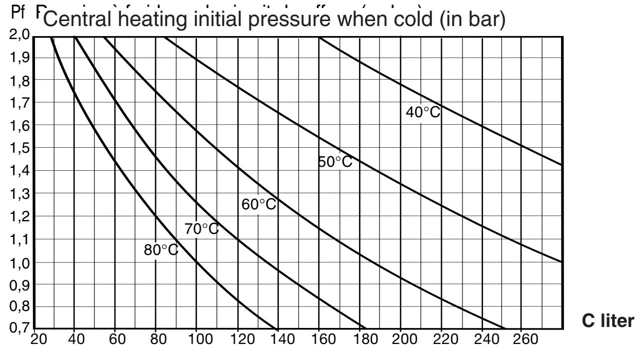
	24 kW	30 kW
Natural gas G20		
Gas rate C/H max	2.64 m³/h	3.01 m³/h
Gas rate C/H mini	0.87 m³/h	1 m³/h
Gas valve restrictor diameter	without	without
Propane L.P.G G31		
Gas rate C/H max.	1.94 kg/h	2.21 kg/h
Gas rate C/H mini	0.64 kg/h	0.73 kg/h
Gas valve restrictor diameter	4.40 mm	4.80 mm

Pump and Expansion Vessel Characteristics

Pump head available



GV F= high speed by-pass closed
GVO = high speed by-pass open
PV F= low speed by-pass closed
PVO = low speed by-pass open

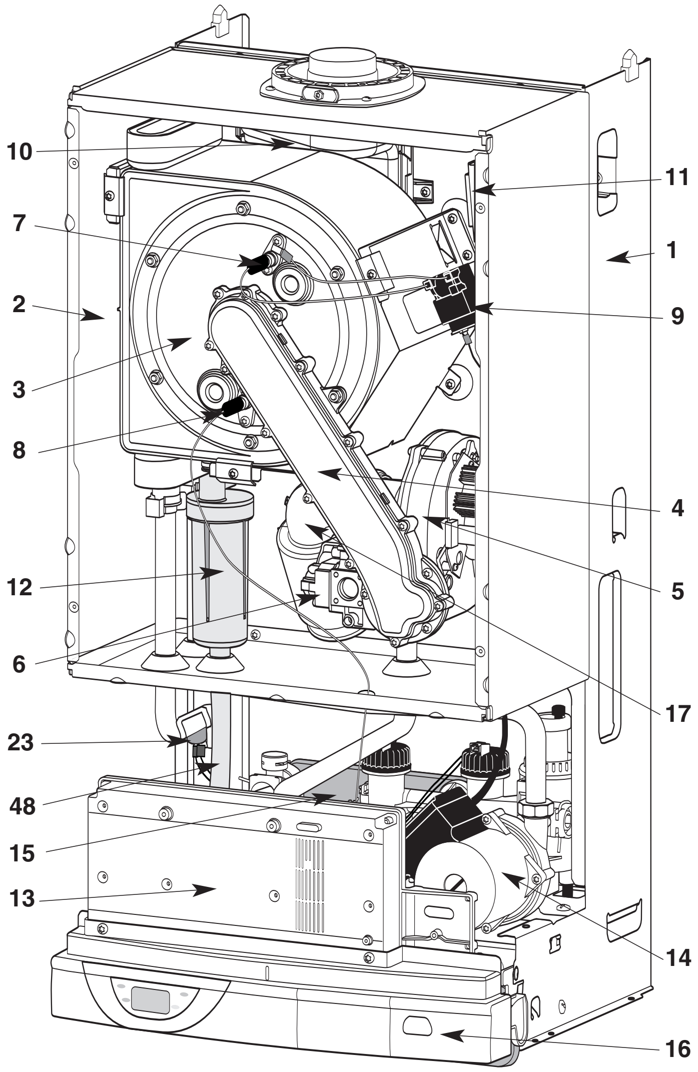


System capacity chart

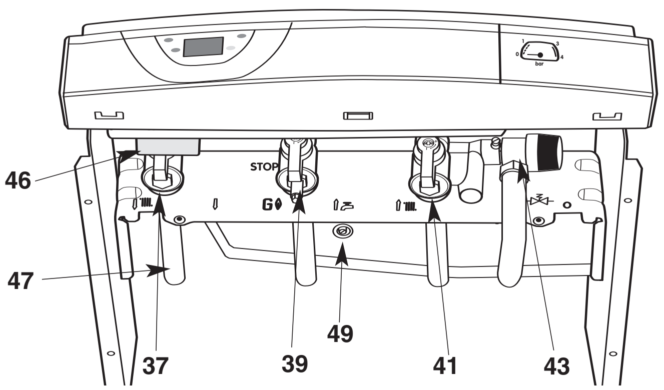
Note : The system initial pressure should be over the following value :

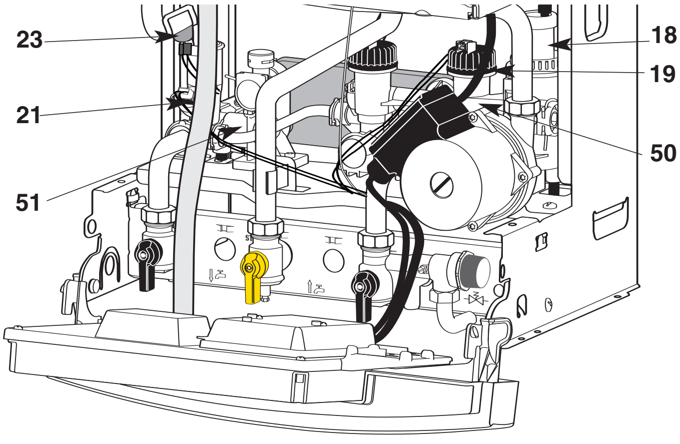
$$\frac{\text{System static height (in metre)}}{10} + 0.7 = \text{Initial pressure (in bar)}$$

Components Location



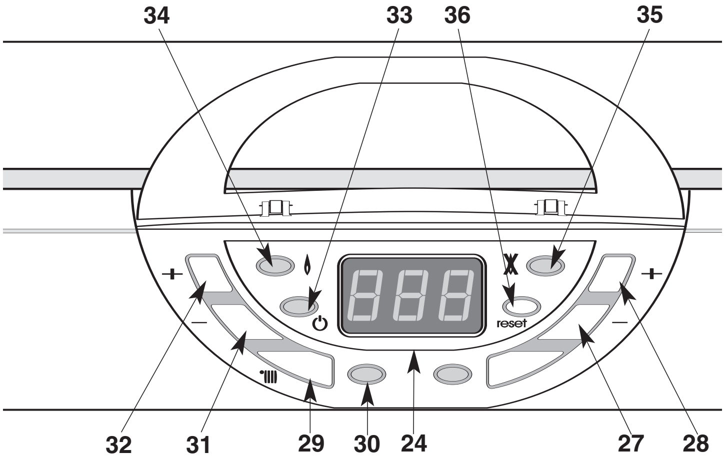
1.- Steel chassis complete with expansion vessel (not visible)
2.- Sealed chamber
3.- Burner and heat exchanger assembly
4.- Air / gas connection
5.- 24 V modulating fan
6.- Gas valve
7.- Ignition electrode
8.- Ionisation probe
9.- Ignitor
10.- Combustion products manifold
11.- 24 V transformer
12.- Siphon
13.- Electrical box
14.- Pump
15.- Shunt plate
16.- Pressure gauge
17.- Silencer
18.- Automatic air separator and automatic vent
19 - Central heating flowswitch
21.- Central heating control thermistor
23.- Overheat sensor
37.- Central heating flow isolating valve
39.- Gas service tap
41.- Central heating return isolating valve
43.- Central heating pressure relief valve
46.- User's guide
47.- Connecting tails (x3)
48.- Condensate drain
49.- Adjustable by-pass
50.- Right hydraulic assy
51.- Left hydraulic assy





FUNCTIONING

Control Panel



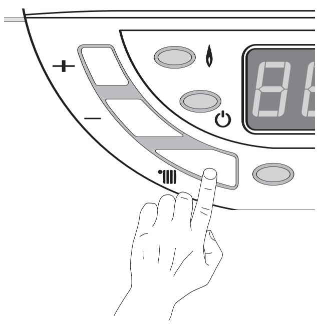
24.- Display
27.- Setting key
28.- Setting key
29.- Central Heating switch
30.- Green indicator – Central Heating mode ON
31.- Central Heating temperature reducing key
32.- Central Heating temperature increasing key
33.- Green indicator – Power ON
34.- Orange indicator - Burner ON
35.- Red indicator - Lock out / flame failure
36.- Reset key

Switching on

1. Check that pressure in central heating system is above 0.7 bar and below 1.5 bar with the pressure gauge 16.
2. Check that the gas service tap is opened at the gasmeter and main power is on. Green indicator ⏻ Power ON **33**.
3. Open the gas tap **39** (fig.21).
   The boiler is now ready to use.

Attention ! If the boiler stays a long time without working, some air in the gas pipe can hinder the first lightings. (please refer to paragraph 19 Incorrect Function)

Switching on Central heating



Press on key **29** , the green indicator **30** will light and the display will show the Heating flow temperature.



Keys **31** (−) and **32** (+) allow to adjust the temperature required in the Central Heating system regarding the weather conditions.

- press (+) to increase temperature when weather is cold
- press (−) to reduce temperature when weather is fair

During the temperature setting operation the display will flash.
If the room thermostat is calling for heat, a dot will be displayed at the bottom of the 3rd digit



Stand by mode



A fixed digit at the centre of the display and the green indicator **33** on

Putting the boiler in stand by mode and anti freeze system. :

Press on key **29** , to switch off CH mode. The green indicators **30** will stop.

During the all duration of the stand by mode, an automatic anti-sticking system will switch on the pump for 1 minute and make a movement of the 3 way valve each 23 hours.
The stand by mode will disable the anti-freeze function of the room thermostat (if fitted). To leave the room thermostat anti freeze system operative, please let the Central Heating mode on.
The boiler is equipped with an automatic anti freeze system which permanently on.
If the Central Heating temperature decrease bellow 7°C, the pump will start.
If the Central Heating temperature decrease bellow 4°C, the pump and the burner will start.

Turn off the boiler

- Press on key **29** , to switch off CH mode. The green indicators **30** will stop
- Switch off the main electrical supply
- Shut off the gas service tap **39** (fig. 21)

Note : In this conditions, the **anti-freeze** system is inoperative

Central Heating Mode

To be able to supply heating, the mode should be switched ON. Press on key **29**, the green indicator **30** will light, and the display will show the Heating Flow temperature.
Keys **31** (−) and **32** (+) allow to adjust the temperature required for Central Heating system regarding the weather conditions. During the setting operation, the display will flash.
When there is a demand for heating, (either from the room thermostat or the clock) the pump starts. If the boiler temperature control is calling for heat and the primary flow rate over 4 lt./min., the central heating flow switch operates, allowing the ignition sequence to begin. The fan on the gas valve assembly starts and when the lighting speed is reached (detected by a hall effect sensor) the 2 safety solenoids open together to allow gas to the burner. The ignition sequence begins and a continuous high speed spark ignites the gas. As soon as a flame is detected, the orange indicator led **34** will light and the regulation system will be able to adjust the gas rate regarding the heat load. If a flame is not detected, after 10 seconds, the security solenoids close together and shut off the gas. The red lockout indicator led **35** will light. Press the reset button to re-light the burner.
The central heating flow temperature is controlled by the central heating control thermistor **21**. The boiler has been designed to minimise cycling and will not attempt to re-light for at least 3 min. after the boiler thermostat has been satisfied. When the room thermostat is satisfied , the burner will switch off and the pump will remain running for a further 3 minutes before it too stops.
Note
It is possible to override the 3 minute delay by pressing the Reset key **36**

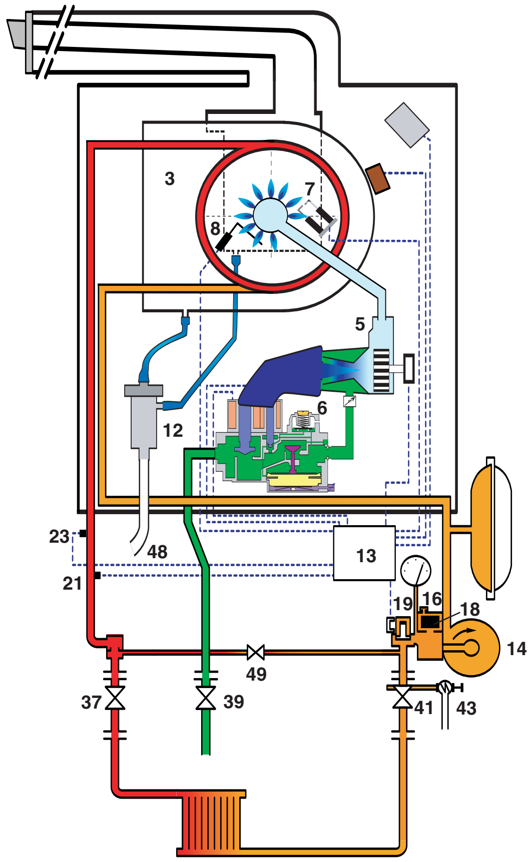
Lockout procedure

Flame disappearance :
When the ionisation electrode **8** does not detect flame presence. The orange indicator led **34** extinguishes. A lighting cycle starts. If a flame is not detected, before 10 seconds, the safety solenoids will close. The lockout red indicator **35** lights and the display shows the error code. The pump continues to run. After a few seconds, it will become possible to reset the boiler by pressing the reset key **36**.

Overheat detection :

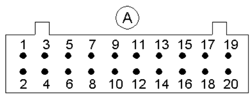
If an overheat (over 100°C) is detected in the primary circuit by the sensor **23**, the safety solenoids close and the fan stops. The orange led **34** extinguishes and the pump remains running for 3 minutes. The reset will be possible when the primary temperature will decrease under 76°C.

CENTORA GREEN FUNCTIONAL DIAGRAM

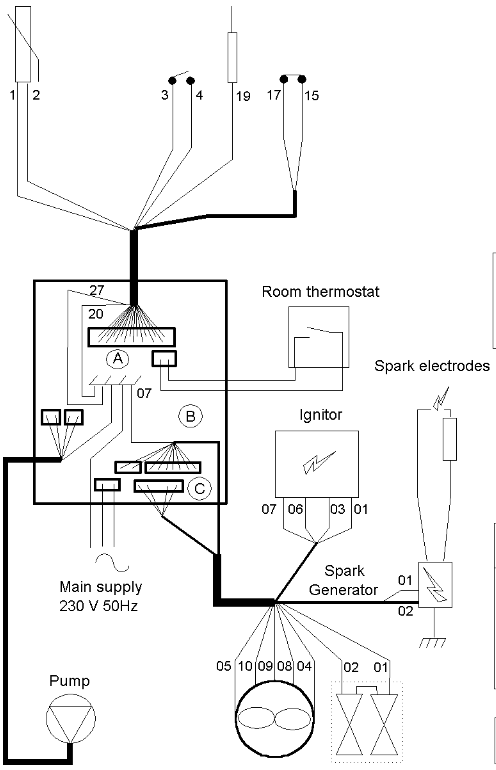


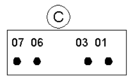
ELECTRICAL WIRING

DIAGRAM

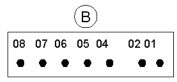


1 2	purple purple	Central heating control termistor
3 4	orange orange	Central heating flowswitch
5 6		
7 8		
9 10		
11 12		
13 14		
15 17	brown brown	Overheat sensor
16 18		
19	white	Ionisation probe
20 27	green / yellow	Mass





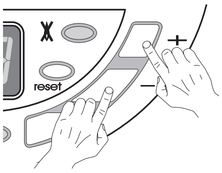
01 03 06 07	pink pink brown brown	Ignitor



01 02	blue grey	Gas valve
04 05 06 07 08	purple red black yellow white	Modulating fan

01 02	red blue	Spark Generator

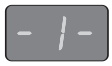
ACTION | CONFIGURATION | DISPLAY

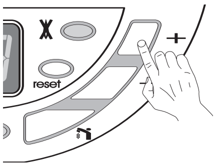


5 ”

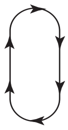
Menu - 1 - Default register

Record the last 10 defaults





x times



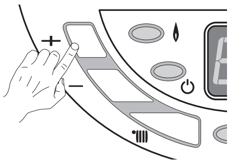
Section	Digit 1	Digit 2 and 3
Last default occured	0.	code from **01** to **99**
Last but one default occurred	1.	code from **01** to **99**
...	...	code from **01** to **99**
Last default occurred before the previous one	9.	code from **01** to **99**







Note **--** is displayed if no default is recorded.

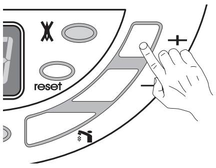


once

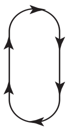
Menu - 2 - Boiler conditions

Indicates the conditions or the configurations of the boiler





x times



Section	Digit 1	Digit 2 and 3
Software version of display PCB	0.	**10** to **99**
Flue type	2.	**1** : FF variable speed
Room thermostat is calling for heat	3.	**0** : no
	3.	**1** : yes
CH flow temperature in Celsius degrees	7.	from **00** to **99**
Software version of main PCB	9.	**10** to **99**





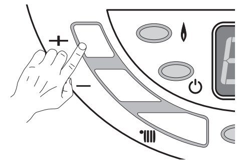


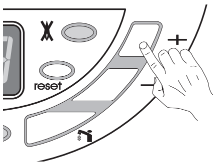


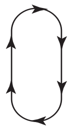




ACTION	CONFIGURATION	DISPLAY


once


x times

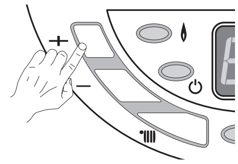


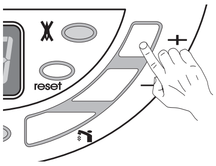
Menu - 3 - Boiler options

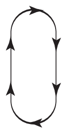
Display: - 3 -

Section	Digit 1	Digit 2 and 3	Display	Factory setting
Under floor heating system	0	**0** : no	0 0	✓
		1 : yes	0 1	

ACTION	CONFIGURATION	DISPLAY


once


x times

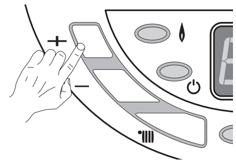


Menu - 4 - Boiler settings

Display: - 4 -

Section	Digit 1	Digit 2 and 3	Display	Factory setting
Room thermostat operation	0	**0** : Burner only	0 0	
	0	**1** : Burner and pump	0 1	✓
Pump speed	1	**0** : High speed	1 0	✓
	1	**1** : Low speed	1 1	
Pump post circulation duration	2	**0**.0 min	20.0	
From 0 to 5 minutes by step of 0.5 min.	2	**0.5** min	20.5	
	2	**1.0 min**	2 1.0	✓
	2	**5.0** min	25.0	
Maximum Central Heating flow temperature	4	**50°C**	450	
	4	**80°C**	480	✓
CH anti cycling delay	8	**0.0** min	80.0	
From 0 to 7 minutes by step of 0.5 min.	8	**0.5** min	80.5	
	8	**2.5** min	82.5	✓
	8	**5.0** min	85.0	
CH maximum output limitation Model 24 From step 0 (P. min.) 8 kW to step 10 (P. max.) 24 kW	9	Value from 0 to 10	906	✓
Model 30 From step 0 (P. min.) 9 kW to step 10 (P. max.) 28 kW	9	Value from 0 to 10	906	✓

ACTION	CONFIGURATION	DISPLAY



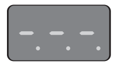
press once

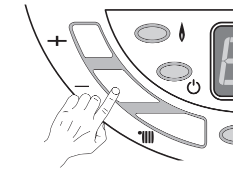
Menu - 5 - Combustion rate control mode



wait 5 ”

Effect	Display
Combustion rate control mode OFF	

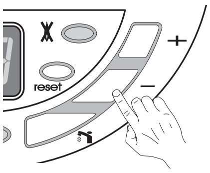




press once

Effect	Display
Switching on the combustion rate control mode. Central heating output reach the maximum power set in menu 4 section 9.	Central heating temperature is displayed in celsius degrees. The 3 dots indicate that the combustion rate control is ON at maximum output.

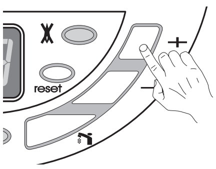




press once

Effect	Display
Switching the combustion rate down to minimum power.	Central heating temperature is displayed in celsius degrees. The dot indicates that the combustion rate control is ON at minimum output.

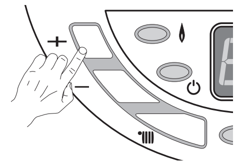




press once

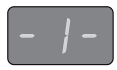
Effect	Display
Switching on the combustion rate to maximum output set in menu 4 section 9.	Central heating temperature is displayed in celsius degrees. The 3 dots indicate that the combustion rate control is ON at maximum output.





press once

Effect	Display
Switching off the combustion rate control mode.	



Locking conditions of the combustion rate control mode :

- boiler in stand by mode
- room thermostat is not calling for heat
- room thermostat is calling for heat but the maximum temperature is reached
- boiler in lockout mode
- after a reset or if the main supply fails
- end of the mode if operator leave menu 5
- after 15 minutes if there is no actions on keyboard

Nota : As soon as the combustion rate control mode is on, Central Heating key is inactive.

9 Adjustments and Settings (continued)

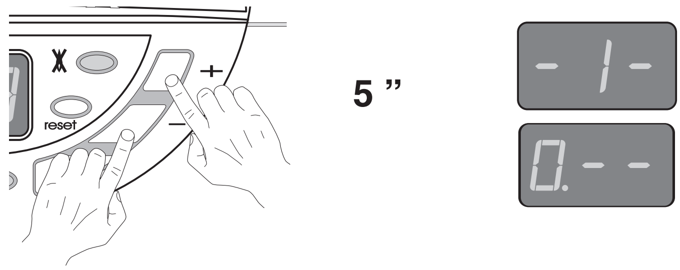
CH heat output setting :

If you would like to change the setting of C/H heat output, please proceed as follow :
(note : the factory setting is 18 kW and the following explanation refer to menu 4 section 9)

Display

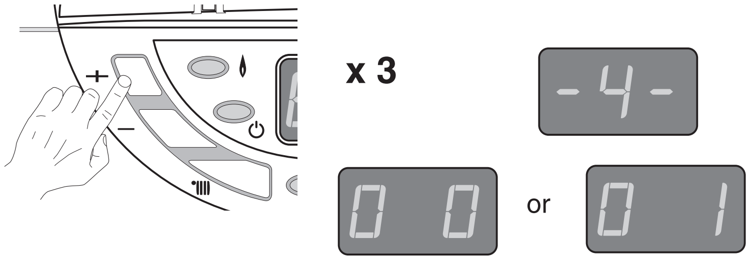
1 - Switch to installer mode, press key (+) and (−) on the Right side for 5 seconds.
The display shows :
-1- then **0.--** if there is no default in the default register.

1



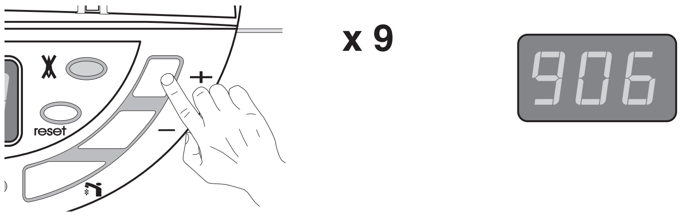
2 - press 3 times on menu key (+) (on the Left side) to gain access to menu -*4-,*
The display shows :
-4- then the value set for section 0 (**00** or **01** respectively Action on burner only or pump and burner)

2



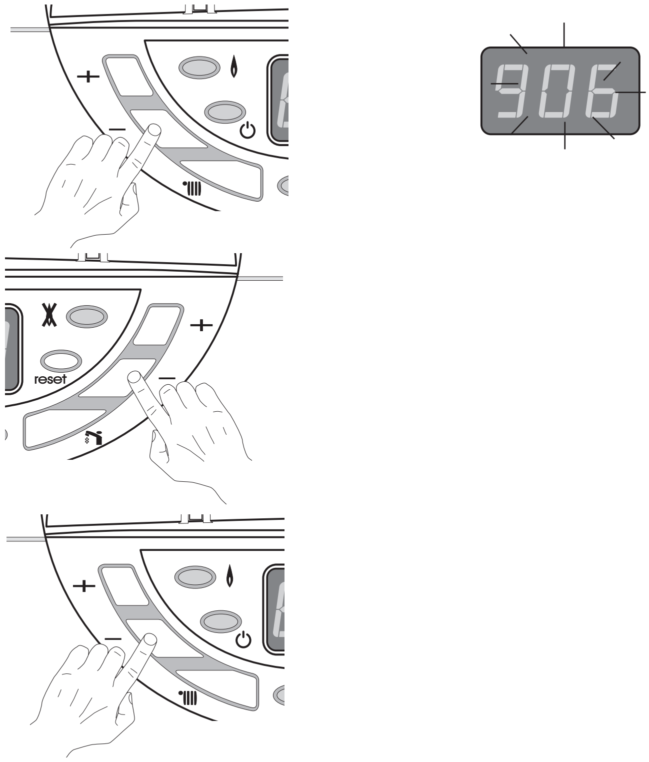
3 - change for section 9 (Adjustment of CH heat output). Press on key (+) on Right side 9 times.
The display shows :
(906 which corresponds to the 18 kW which is the factory setting)
9 = section 9 ***06*** = 18 kW

3



4 - press on setting key (−) (on the Left side) once, the 2nd and 3rd digits flash together. Then press the (−) key on the DHW or CH side to change the C/H heat output steps between **00** and **10**.
Press on setting key to confirm the value. The display stops flashing.
Setting procedure is finished.
To exit from setting mode, leave the boiler for approx. 1 minute then the computer will switch back to user mode.
After programming please close the door **P** (fig. 18)

4



REGULATION

Temperature regulation for C/H circuit is controlled by 1 thermistor. The C/H knob allows the adjustment of temperature between 35 and 85°C.

Resistance value are

- 5000 Ω at 25 °C
- 2631 Ω at 40°C
- 620 Ω at 80°C
- 255 Ω at 110°C

FLOW SWITCHES

Flow in Heating circuit is detected by 1 flow switche. A piston with a magnet at the top operates a REED switch. The piston is lifted by flow rates listed below :

Flow rate threshold :

C/H 250 l/h ±20 l/h

ROUTINE SERVICING

To ensure continued efficient operation of the appliance, it is recommended that it is checked and serviced as necessary at regulars intervals. The frequency of servicing will depend upon the particular installation condition and usage, but in general, once a year should be adequate.

It is the law that any service work must be carried out by a competent person such as your local Chaffoteaux Service Centre, British Gas or other CORGI registered personnel in accordance with the current Gas Safety (Installation and Use) regulation.

Attention ! the air/gas connection pipe between the gas valve and the burner should never open. The seal can be checked only in the factory.

The service schedule should include the following operations :

- Check the pressure in the system
- Check the correct operation of the appliance
- Check the correct operation of the gas controls
- Check the functions of safety controls
- Clean the electronic board of the fan located on the gas valve assembly and the different transformers in the sealed chamber.
- Check combustion chamber insulation panels for damage
- Check the lighting and ionisation electrodes condition
- Clean the burner (Never use metallic brush which can damage the stainless steel)
- Clean the heat exchanger (Never use metallic brush which can damage the stainless steel)
- Clean the siphon and pay attention to the acidity of its contents
- Check the correct seal of the drain system
- Clean gas and water filters
- Check expansion vessel charge pressure
- Clean an check operation of safety valve
- Check the correct seal of the flue system.

Additional procedures that may be necessary :

- Check the burner pressure and the gas flow rates
- Check, clean or replace components as necessary
- Carry out combustion test utilising the test points in the flue turret

Suggested sequence for servicing :

Before disconnecting or removing any part, isolate the gas and electricity supplies. Ensure that the appliance is cool, and take care about the condensats products content in the siphon which are acid.

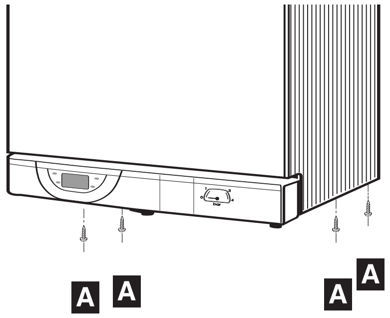
(For detail, please see section on Parts Removal and Replacement)

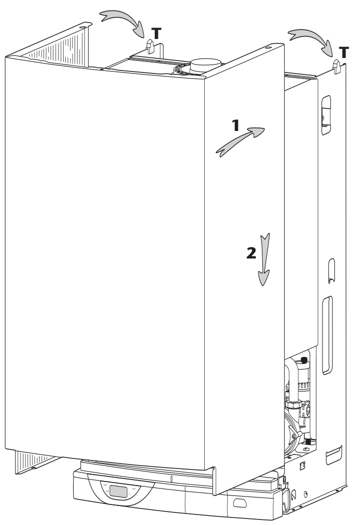
Preliminary checks

- Remove outer case
- Check the system pressure is at least 0.7 bar cold
- Check that the burner is extinguished fully when both solenoids are closed and fan is off.
- Test ionisation functions and check that lockout occurs by turning off gas tap.
- Whilst boiler is operating, check operation of the primary flow switch by closing heating flow valve and by pass screw (turn clockwise) noting the number of turns so that it may be reset correctly.
- Control the correct flood of condensats in the siphon which is transparent.

Before removing appliance case, isolate the gas and electrical supplies. Isolate boiler from the system and drain before removing any component in the waterways. Ensure that the appliance is cool.

1. Outer Case
Remove four screws in base of case and lift free. When replacing, carefully locate on lugs **T** on top edge of chassis.





2. Sealed chamber front panel
Unscrew four self taping screws securing the sealed chamber front panel and lift over top corner locating lugs.
Reassemble in reverse order.

3. Combustion Chamber front panel and air/gas connection
Carry out step 1 and 2 as above. Unscrew three screws securing the air/gas connection pipe onto the gas valve assembly. Disconnect Ionisation and lighting electrodes from their wiring. Unscrew six nuts to release combustion chamber front panel and pull the assembly towards you. Reassemble in reverse order.

4. Ionisation electrode
Carry out step 1 and 2 as above. Disconnect ionisation electrode from its wiring. Loosen the 2 screws and pull it out from the combustion chamber front panel. Replace the ionisation gasket provided. Reassemble in reverse order

5. Lighting electrode
Carry out step 1 and 2 as above. Disconnect lighting electrode from its wiring. Loosen the 2 screws and pull it out from the combustion chamber front panel. Replace the ionisation gasket provided. Reassemble in reverse order.

6. Burner
Carry out step 1, 2 and 3 as above. Remove the 4 Philips screw retaining the burner onto the combustion chamber. Pull it out with care to avoid any damage to the ceramic panel protecting the combustion chamber front panel. Replace the burner gasket. Reassemble in reverse order.

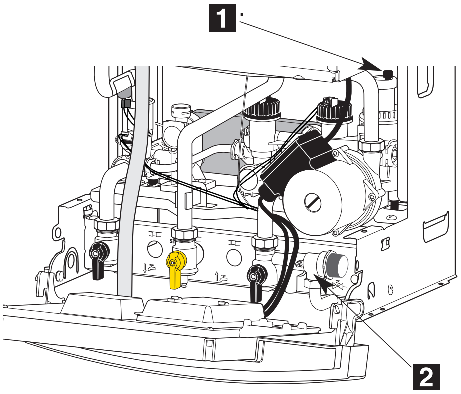
7. Gas vale assembly
Carry out step 1 and 2 as above. Unscrew three screws securing the air/gas connection pipe onto the gas valve assembly. Disconnect the connectors from gas solenoids and fan. Loosen the gas pipe nut. Unscrew six nuts to release combustion chamber front panel and pull the assembly towards you. Replace gas filter before fitting the full assembly back in the boiler.

8. Fan assembly
Carry out all operations mentioned in step 7. Unscrew the three screws securing the air/gas connection pipe onto the gas valve assembly. Separate the gas valve assembly and the venturi from the fan assembly by loosen the two hexagonal head screws. Reassemble in reverse order and replace the necessary gaskets.

9. Gas section
Carry out all operations mentioned in step 7. Unscrew the three screws securing the air/gas connection pipe onto the gas valve assembly. Separate the gas valve assembly and the venturi from the fan assembly by loosen the two hexagonal head screws. The venturi and the gas section can be separated loosing the 2 screw located at the top of the gas valve. Replace necessary gaskets before reassemble in reverse order.

10. Venturi in the gas section
Carry out all operations mentioned in step 7. Unscrew the three screws securing the air/gas connection pipe onto the gas valve assembly. Separate the gas valve assembly and the venturi from the fan assembly by loosen the two hexagonal head screws. The venturi and the gas section can be separated loosing the 2 screw located at the top of the gas valve. Replace necessary gaskets before reassemble in reverse order.

11. Drain down
2 drain points are located on the boiler

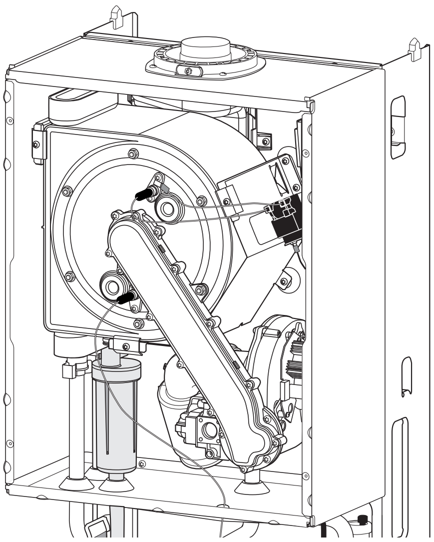


1 = Air separator
2 = Heating circuit drain point

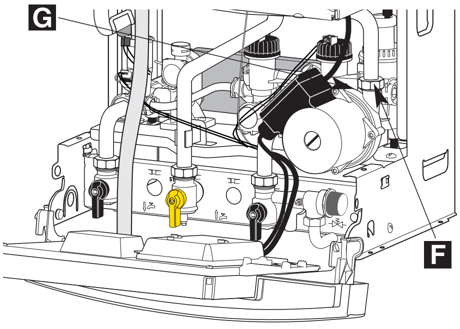
12. Water filter
The C/H filter is located in the right hydraulic assembly. Remove the return pipe as described previously and withdraw the filter. Reassemble in reverse order.

13. Flow switch
Drain boiler as in step 11. Disconnect the electrical plug, turn the top cover anti-clockwise, remove the O-ring and the brass piston. Reassemble in reverse order.

16. Main heat exchanger
Carry out step 1 and 2 as above. Drain down the boiler as in step 11. Unscrew three screws securing the air/gas connection pipe onto the gas valve assembly. Disconnect Ionisation and lighting electrodes from their wiring. Unscrew six nuts to release combustion chamber front panel and pull the assembly towards you. Undo the two clips of the pipes to the main exchanger and pull down the pipes. Unscrew the three screws located at the bottom, top left and at the right with the retaining system to be able to pull the main heat exchanger towards you.
Reassemble in reverse order taking care about the location of the gasket on the fumes collector and replace the necessary gaskets.

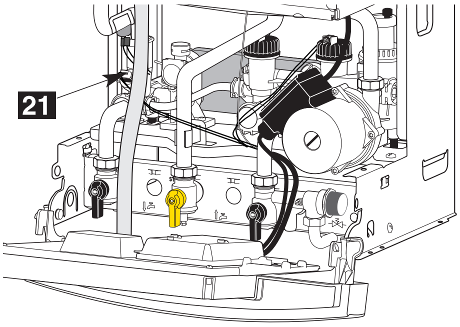


17. Pump
Drain boiler as in step 11. Pivot the electical box downwards. Open the electrical box cover removing the 2 screws. Remove the pump plug from the power board and earth plug from earth socket. Unscrew the nut **F** of the return pipe from the volute. Remove the clip **G** on the pump volute and pull the pump toward you. Reassemble in reverse order.



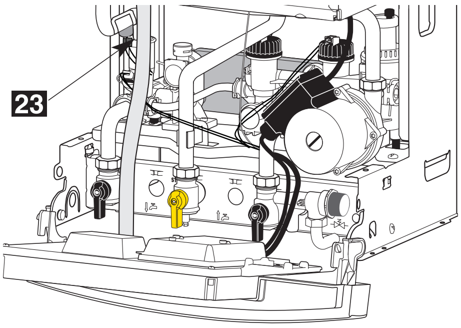
18. Pressure relief valve
The pressure relief valve can be serviced from the front of the appliance. Drain the boiler first, undo the retaining screw and pull out the valve.Reassemble in reverse order.

19. Thermistor
Drain the boiler as step 11. Disconnect the plug, remove the retaining clip pull the thermistor out. Reassemble in reverse order.



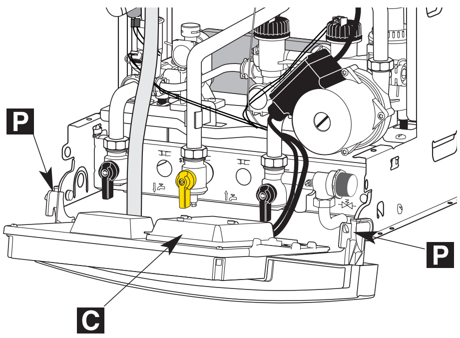
21 = Heating thermistor

20. Safety thermostat
Remove the casing as step 1 and hinge down the electrical box as step 5. Disconnect the 2 cables, pull out the sensor with the clip (23). Reassemble in reverse order.



21. Spark generator
Carry out step 1 and 2 as above. Unplug the connector from the spark generator located on the right hand side of the main heat exchanger. Loosen the two screws to remove the igniter. Reassemble in reverse order.

22. Main control board
Carry out step 1 as above and hinge down electrical box by pressing the retaining tabs **P** on either sides. Remove wiring cover **C**. Undo the 4 screws of the electrical rear panel and remove it. Unplug all cables from the PCB, remove earth plug from earth socket. Hang out the main PCB. Reassemble in reverse order.

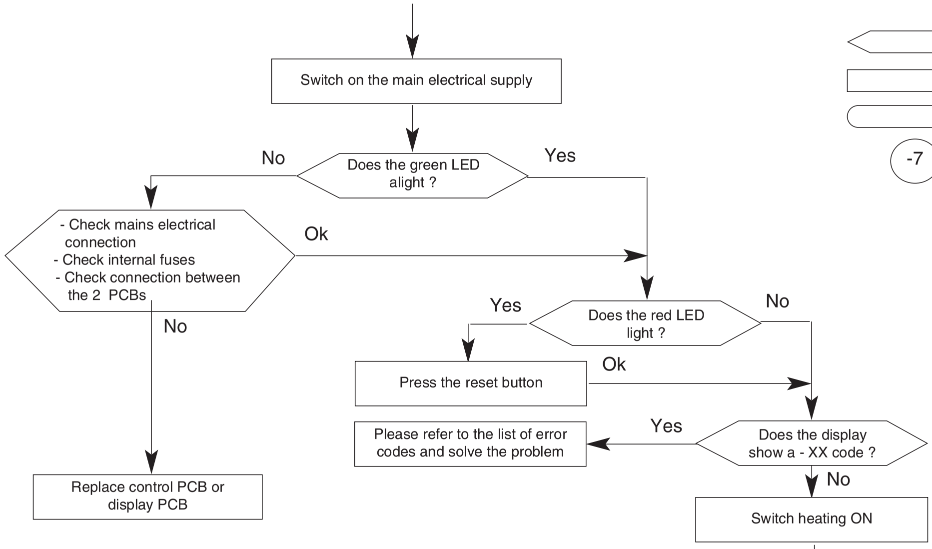


23. Display PCB
Carry out step 1 as above and hinge down electrical box by pressing the retaining tabs P on either sides. Remove the pressure gauge clip. Rotate the electrical box back in upper position. Undo the 2 screws retaining the front panel, put your two hands at the bottom of the front panel and pull it down to release it from the 2 clips. Hinge down again the electrical box. Undo the 4 screws of the electrical rear panel and remove it. Unplug the display board cables from the main PCB. Reassemble in reverse order.

24. Expansion vessel
Remove the casing as step 1 and drain the boiler as step 12 above. Unscrew the connecting tails nuts and lift out the boiler from the wall. Place it on a side on the floor. Remove the expansion vessel bracket retaining screws, disconnect the pipe from the vessel and pull it toward you. Reassemble in reverse order.

25. Pressure gauge
Carry out step 1 as above and drain the boiler as step 12. Hinge down electrical box by pressing the retaining tabs P on either sides. Press on the clip to remove it and pull it out. Remove the clip which hold the connection of the capillary on the pump hose. Hang out the pressure gauge with its capillary. Reassemble in reverse order.

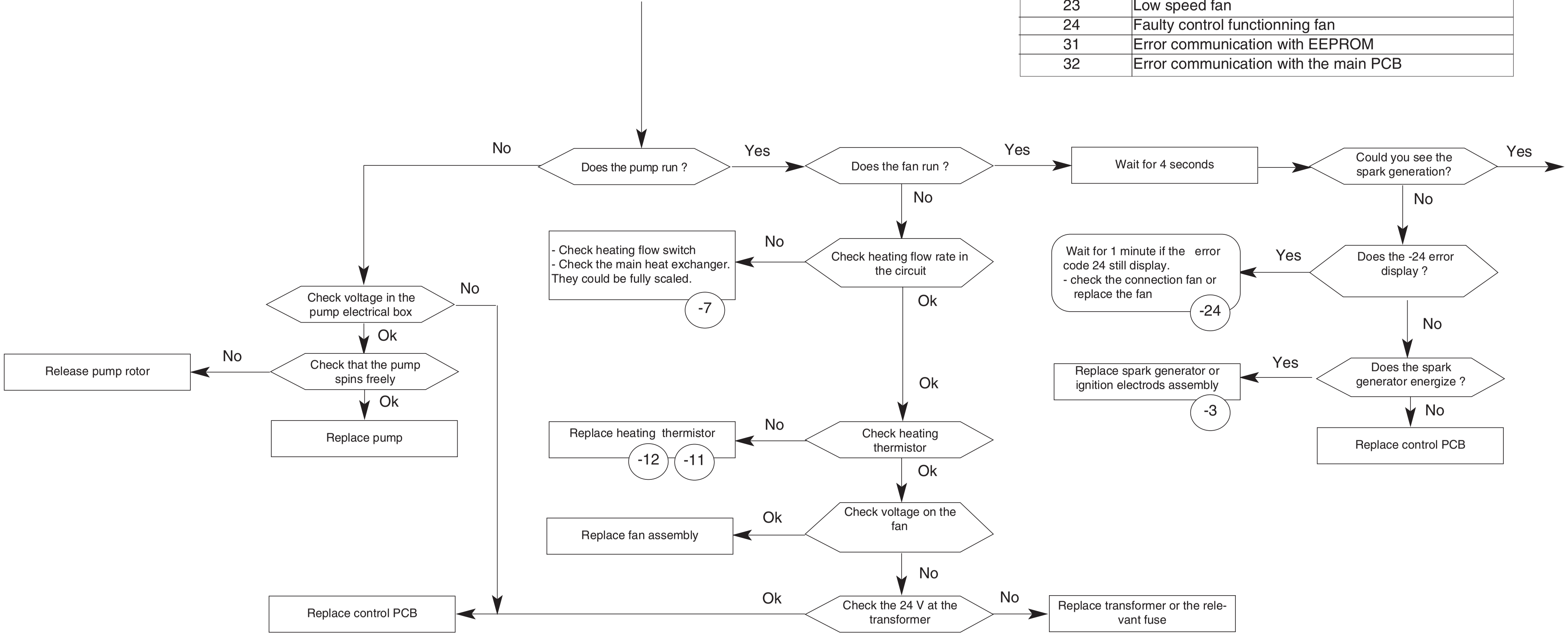
FAULT FINDING CHART Part 1



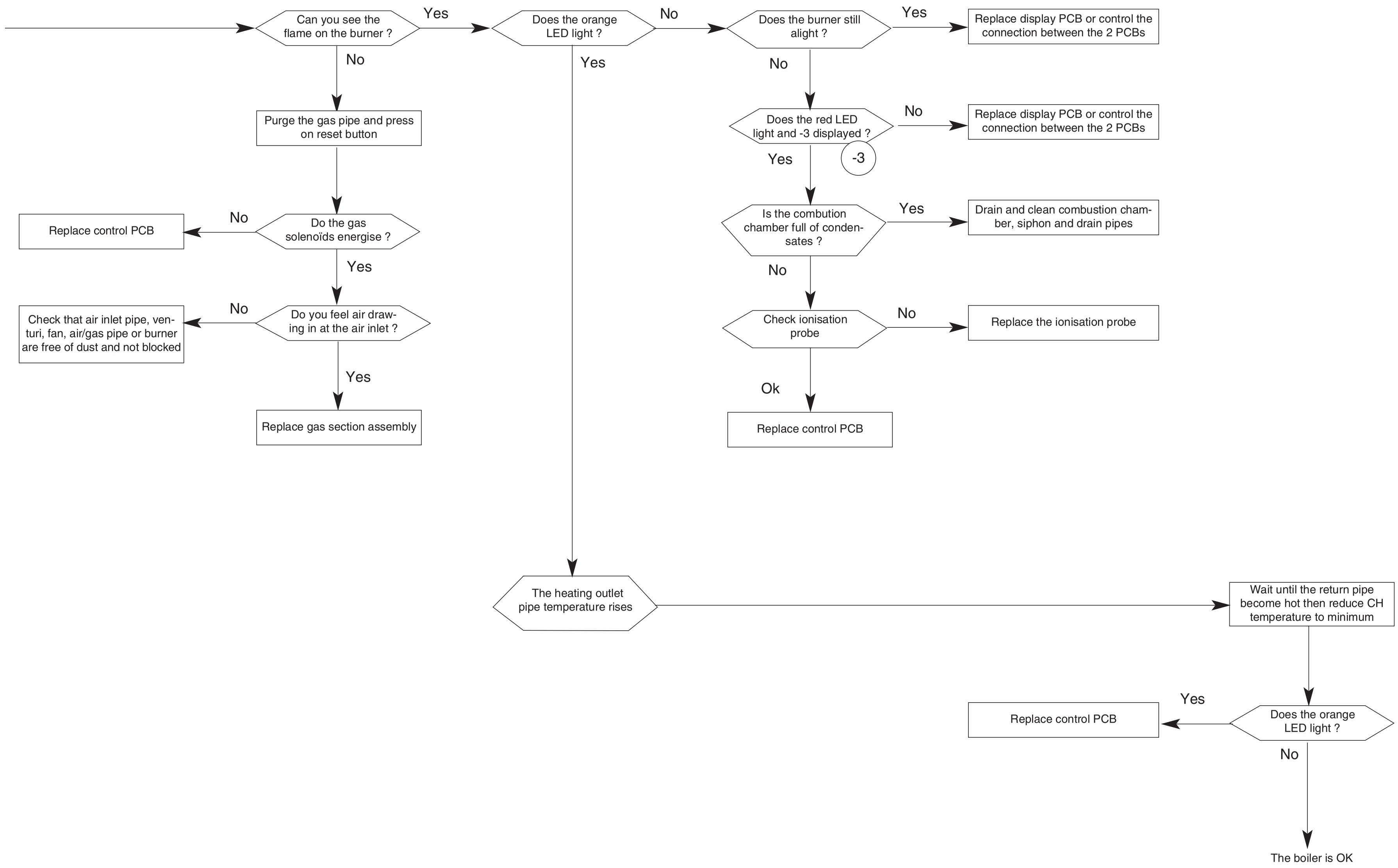
- (test symbol) means a test or a choice
- (action symbol) means an action
- (group symbol) means a group of actions
- -7 error code displayed

PLEASE CHECK THE FOLLOWING POINTS CAREFULLY BEFORE GOING THROUGH THE FAULT FINDING CHART
-Gas pressure
-Electric mains
-Minimum water pressure in the heating circuit (over 0.8 bar)
-All isolating valves have been opened
-Boiler air vented
-Check that the heating filter is clear.
- Remove the front panel of the sealed chamber

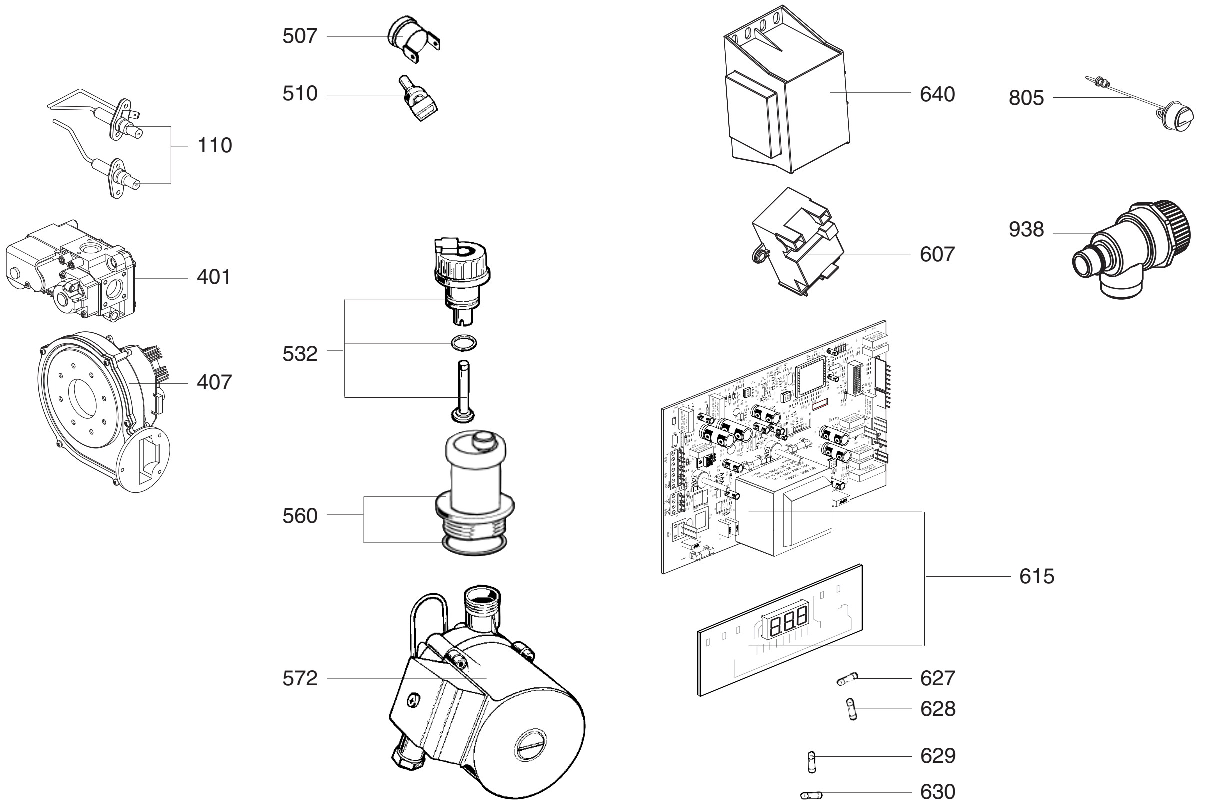
Error code	Description
1	Overheating LockOut
3	No flame detection
5	Anti-frost mode on
6	Anti-frost mode on
7	No water circulation
8	Faulty water circulation in the primary circuit
11	Central heating thermistor faulty, Opened circuit
12	Central heating thermistor faulty, Short circuit
18	Ignition test
20	Faulty connexion
23	Low speed fan
24	Faulty control functionning fan
31	Error communication with EEPROM
32	Error communication with the main PCB



FAULT FINDING CHART Part 2



SHORT LIST



Key N°	Description	G.C N°	Manf. Pt. N°	Type	Centora green system FF	Manf. date from	Manf. date to
110	ELECTRODE KIT		1309624		●		
401	GAS VALVE (24 kW)		1307584		●		
	GAS VALVE (30 kW)		1310129		●		
407	FAN ASSY		1307585		●		
507	OVERHEAT THERMOSTAT 100°C		1010572		●		
510	THERMISTOR		1000733		●		
532	WATER THROTTLE		81471		●		
560	AIR SEPARATOR HEAD ASSEMBLY		1002653		●		
572	PUMP UP 15/50 230V		1010612		●		
607	IGNITER		1002105.20		●		
615	PRINTED CIRCUIT BOARD		1310357		●		
627	FUSE 250V 2A - TEMPORIZED		1003456		●		
628	FUSE 250V 1A - TEMPORIZED		1003634		●		
629	FUSE 250V 1.25A - TEMPORIZED		1003635		●		
630	FUSE 250V 0.315A - TEMPORIZED		1307845		●		
640	TRANSFORMER		1308149		●		
805	PRESSURE GAUGE		1303158		●		
938	PRESSURE RELIEF VALVE		1020933		●		

This appliance is suitable for Natural gas or LPG. A gas conversion must be made by a competent person.

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Customer Service Help Desk: 0870 600 9888

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